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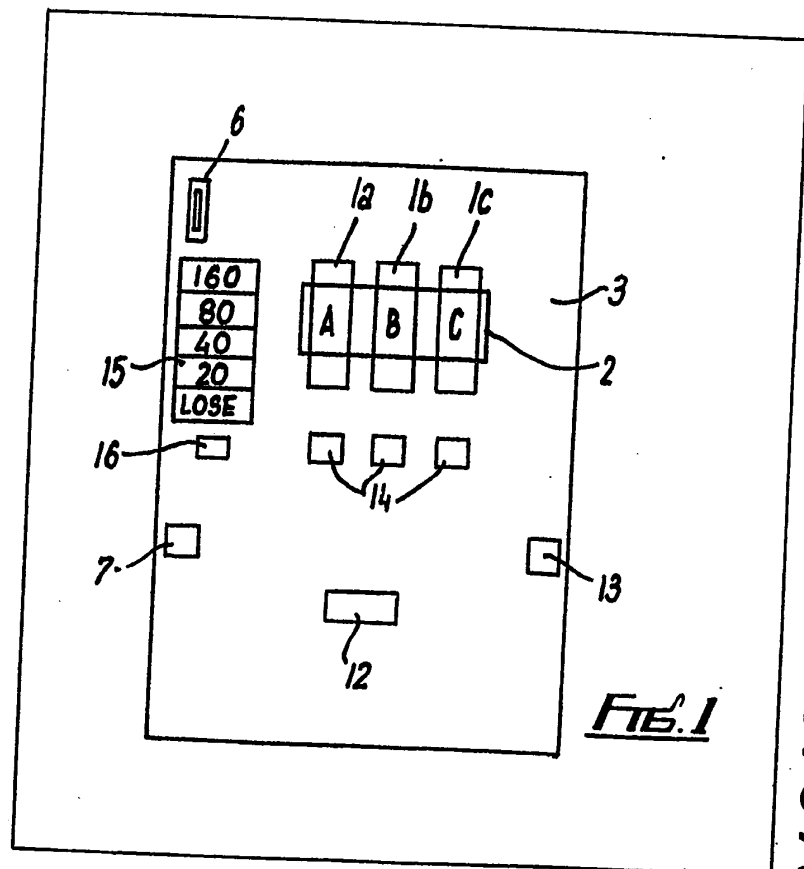
(54) Entertainment machines

(57) A coin-operated entertainment machine such as a fruit machine is operated by a player to produce a displayed combination of symbols. When a winning combination is obtained a mechanism (10) is operated to give an appropriate pay-out, although first the player may be given the opportunity of changing the

pay-out by operation of a gamble device (16).

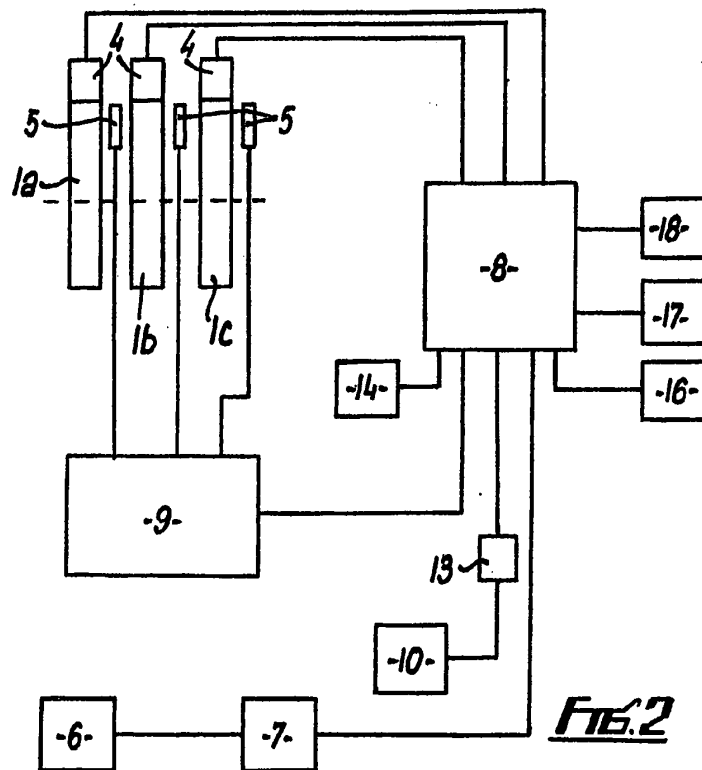
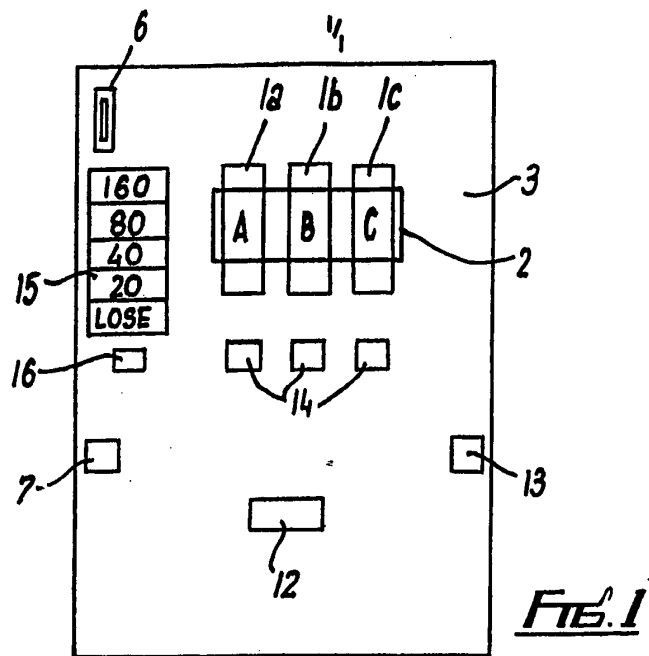
An adjustment mechanism (18) is also provided and this can operate in correspondence with the gamble device to change the displayed symbol combination to accord with the changed pay-out value.

Hold buttons (14) may be provided for holding the displayed symbols during a subsequent game.



GB 2 096 376 A

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SPECIFICATION Entertainment machines

This invention relates to coin or token-operated entertainment machines and is particularly
5 although not exclusively concerned with such machines of the kind known as fruit machines.

It is known to provide a fruit machine with a 'gamble' feature whereby, after attaining a win but before receiving a pay-out which corresponds to
10 such win, the player has the option of actuating a gamble device which operates on a random basis and can modify the payout by increasing or cancelling same. This feature advantageously contributes to the entertainment value of the machine.

An object of the present invention is to provide an improved gamble device capable of contributing yet further to the entertainment value of an entertainment machine.

20 According to the invention therefore there is provided a coin or token-operated entertainment machine comprising a plurality of main display regions, means operable to produce a display of one or more symbols at each said region, some
25 combinations of said displayed symbols being winning combinations and others being losing combinations, a pay-out mechanism operable to give a pay-out following a winning said combination, the value of the pay-out being
30 different for different said winning combinations, a gamble device operable after production of a winning combination to change the value of the pay-out, and an adjustment mechanism operable in correspondence with the gamble device to
35 change the displayed symbol combination to accord with the changed pay-out value.

With this arrangement, further entertainment value can be derived from the fact that the player can initiate change of the displayed symbol
40 combination at the same time as he gambles an attained win in the hope of obtaining an increase of pay-out value.

Moreover, yet further entertainment value can be derived with the machine of the invention in
45 the case where player-operable hold controls are provided (as is common with fruit machines), which controls can be operated at the start of a game to hold existing displayed symbols at one or more of the said display regions against change
50 during the course of the ensuing game. That is, at the end of one game and following a win a player may be able to obtain an increased pay-out value by operation of the gamble device and the resulting corresponding change in the displayed
55 symbol combination may carry forward to the next game whereby if the hold facility is then made available the player may be able to hold some or all of the displayed symbols and thereby guarantee or increase the likelihood of again
60 obtaining the increased pay-out value.

The gamble device and the adjustment mechanism may become available for operation on all winning occasions or only on some such occasions on a random or predetermined basis.

65 When so available preferably operation thereof is only effected when initiated by a player-operable control such as a press button.

Most preferably, the machine incorporates a gamble indicator which comprises an
70 arrangement of indications representative respectively of the different pay-out values obtainable with the machine and also a lost or nil pay-out representation, the appropriate such indication being illuminated after operation of the
75 gamble device to indicate the new pay-out value obtained.

The gamble device may be operable, preferably in a random manner, to select any of the pay-out values (including a nil pay-out) obtainable with the
80 machine, or alternatively to select from a predetermined limited range of such values. In one embodiment the gamble device is operable to select from two pay-out values respectively above and below that originally obtained. With this
85 embodiment and where the above mentioned gamble indicator is provided, advantageously the arrangement may be such that during availability of the gamble feature but before operation of the gamble device the selectable values above and
90 below the originally-obtained value are illuminated with flashing lights (as for example by alternate illumination thereof).

The gamble device may be operable once only per game or alternatively successive operations thereof may be permitted whereby the player can
95 try to attain successive increases in the pay-out value. In the latter case the gamble device may cease to be operable when the highest pay-out value is reached or following a decrease in the pay-out value.

Most preferably the machine of the invention is a fruit machine and the displayed symbols (which may be representation of fruit) are selected at
100 random as by the rotation of reels (usually three or four reels) having such symbols marked around the periphery thereof, or by the operation of a vdu display simulating such rotation of reels (as described in our co-pending British Application
105 24720/78), or by the random illumination of symbols on areas of a display panel, or otherwise.

The invention will now be described further by way of example only and with reference to the accompanying drawings, in which:—

110 Fig. 1 is a diagrammatic representation of a front panel of one form of an entertainment machine according to the present invention; and

Fig. 2 is a diagram showing operational components of the machine.

120 The machine is a fruit machine having three reels 1a, 1b, 1c, which are rotatable within a housing behind a window 2 in a front panel 3 thereof. Each reel 1 has pictures of fruit (designated A, B, C) at 20 positions around the periphery of same, and rotation of each reel is
125 initiated and also arrested by a solenoid device 4 having a pawl engageable with teeth around the edge of the reel. Actuation of the solenoid 4 causes the pawl to be withdrawn from engagement with the teeth and to cause the reel 1

- to rotate freely, and deactuation of the solenoid causes the pawl to drop back into engagement with the teeth to arrest the reel in one of the 20 stopping positions thereof in which one of the pictures of fruit on the periphery of same is in precise registration with the window 2. Each stopping position is identified by a respective coded arrangement of holes in a side wall of the reel and the codes are read by a bank of photosensitive devices 5 which receive light from a light source or sources through the holes.
- In use, the machine is actuated by a player by insertion of one or more coins or tokens into a coin mechanism 6 and a starter button 7 is pressed to operate a control unit 8 which causes the three reels 1 to be set in rotation for different random periods of time. When the reels come to rest, the stopping positions thereof are identified by the photosensitive devices 5 in conjunction with data processing circuitry 9 and a win indication is produced which may enable a pay-out mechanism 10 to be actuated by a pay-out button 13 in the event that the identified stopping positions correspond to the display of a predetermined winning combination of fruit (say three fruit of the same kind) through the window 2.
- Coins or tokens paid out are delivered to the player through an outlet 12.
- In accordance with conventional practice, beneath each reel there is provided a respective hold button 14. At the start of some games, as selected on a random basis, the hold buttons 14 are made available for operation and when so operated by the player the or each pertaining reel is held against rotation during the course of the ensuing game.
- At one side of the front panel 2 there is a gamble indicator 15 with a gamble button 16 beneath same. The indicator comprises a series of marked indications constituting the different winning pay-out values which can be obtained with the machine (say 20, 40, 80, 160) and also a nil pay-out or lose indication. Whenever a win is obtained with the machine, the corresponding pay-out value is illuminated with steady light (by a respective bulb 17) on the Indicator 15. At the same time, and as appropriate, indications above and below such value are alternately illuminated with flashing lights. The player now has the option of pressing the button 13 to obtain the pay-out corresponding to his win or of pressing the gamble button 16 whereupon one of the said above and below indications is selected at random (and is illuminated with steady light) and the player receives the corresponding new pay-out value (which will be greater or less than that originally indicated) if he now presses the pay-out button 13. The arrangement may be such that the above and below indications always constitute respectively that immediately above and that immediately below the original indication or, alternatively, that immediately above and the lose indication. In the latter case if the player gambles unsuccessfully he receives no pay-out. In the former case an unsuccessful gamble may still result in a pay-out if the original indication is above the lowest actual pay-out value (i.e. above 20 in the drawing). The arrangement may be such that the player is only ever allowed one gamble per game. Alternatively, the player may be allowed successive gambles as long as such gambles are successful and until the highest pay-out value has been reached.
- The gamble button is arranged also to operate a reel-position adjustment mechanism 18. After selection of a new pay-out value with the gamble button the mechanism 18 initiates adjustment of the positions of the reels 1 such that the displayed combination of symbols on the winning line changes from the original winning combination to a new combination corresponding to the new pay-out value. Thus, a winning combination of three like fruit may change to a winning combination of three other like fruit where an actual pay-out of greater or less value is obtained; and a winning combination of three like fruit may change to a losing combination of three different fruit where the player gambles unsuccessfully.
- Thus, when using the gamble facility the player can derive additional entertainment value from the corresponding change in the displayed symbols. Moreover, it will be appreciated that a new symbol combination obtained as a consequence of use of the gamble button may carry forward to the start of the next game which may be advantageous to the player if the hold facility then becomes available. That is, in the next game the player may be provided with the opportunity of holding some or all of the symbols of a high value winning combination whereby guaranteeing or increasing the likelihood of a repeated high value pay-out.
- Adjustment of the positions of the reels may be achieved in any suitable manner. This may involve spinning the reels and then stopping same when the sensors 5 detect occurrence (or imminence) of reel positions corresponding to the required new symbol combination. Alternatively, utilising knowledge of the sequence of symbols on the reels, the reels may be indexed through predetermined numbers of stopping positions.
- It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only.
- Thus, for example, as an alternative to the use of the solenoids 4 and the code-reading sensors 5 it is possible to use, for example, respective stepper motors for driving the respective reels, and a position detection system which responds to and counts stopping positions from datum points on the reels (defined for example by light sensitive devices which receive light through holes in the reels).
- Moreover, as an alternative to the use of reels it is possible to use a vdu display which simulates the rotation of reels and in this case the gamble indicator may be displayed on a region of the vdu screen.

CLAIMS

1. A coin or token-operated machine comprising a plurality of main display regions, means operable to produce a display of one or more symbols at each said region, some combinations of said displayed symbols being winning combinations and others being losing combinations, a pay-out mechanism operable to give a pay-out following a winning said combination, the value of the pay-out being different for different said winning combinations, a gamble device operable after production of a winning combination to change the value of the pay-out, and an adjustment mechanism operable in correspondence with the gamble device to change the displayed symbol combination to accord with the changed pay-out value.
2. A machine according to claim 1, wherein player-operable hold controls are provided, which controls can be operated at the start of a game to hold existing displayed symbols at one or more of the said display regions against change during the course of the ensuing game.
3. A machine according to claim 1 or 2, wherein the gamble device and the adjustment mechanism become available for operation only on some winning occasions.
4. A machine according to any one of claims 1 to 3, wherein said gamble device and adjustment mechanism, when available for operation, are arranged to operate only when initiated by a player-operable control.
5. A machine according to any one of claims 1 to 4, including a gamble indicator which comprises an arrangement of indications representative respectively of the different pay-out values obtainable with the machine and also a lost or nil pay-out representation, the appropriate such indication being illuminated after operation of the gamble device to indicate the new pay-out value obtained.
6. A machine according to any one of claims 1 to 5, wherein the gamble device is operable to select from two pay-out values respectively above and below that originally obtained.
7. A machine according to claims 5 and 6, wherein the arrangement is such that during availability of the gamble feature but before operation of the gamble device the selectable values above and below the originally-obtained value are illuminated with flashing lights.
8. A machine according to any one of claims 1 to 7, which is a fruit machine and wherein the displayed symbols are selected at random by rotation of reels having such symbols marked around the periphery thereof.
9. A machine according to any one of claims 1 to 7, which is a fruit machine and wherein the displayed symbols are selected at random by the operation of a vdu display simulating the rotation of reels having such symbols marked around the periphery thereof.
10. A machine substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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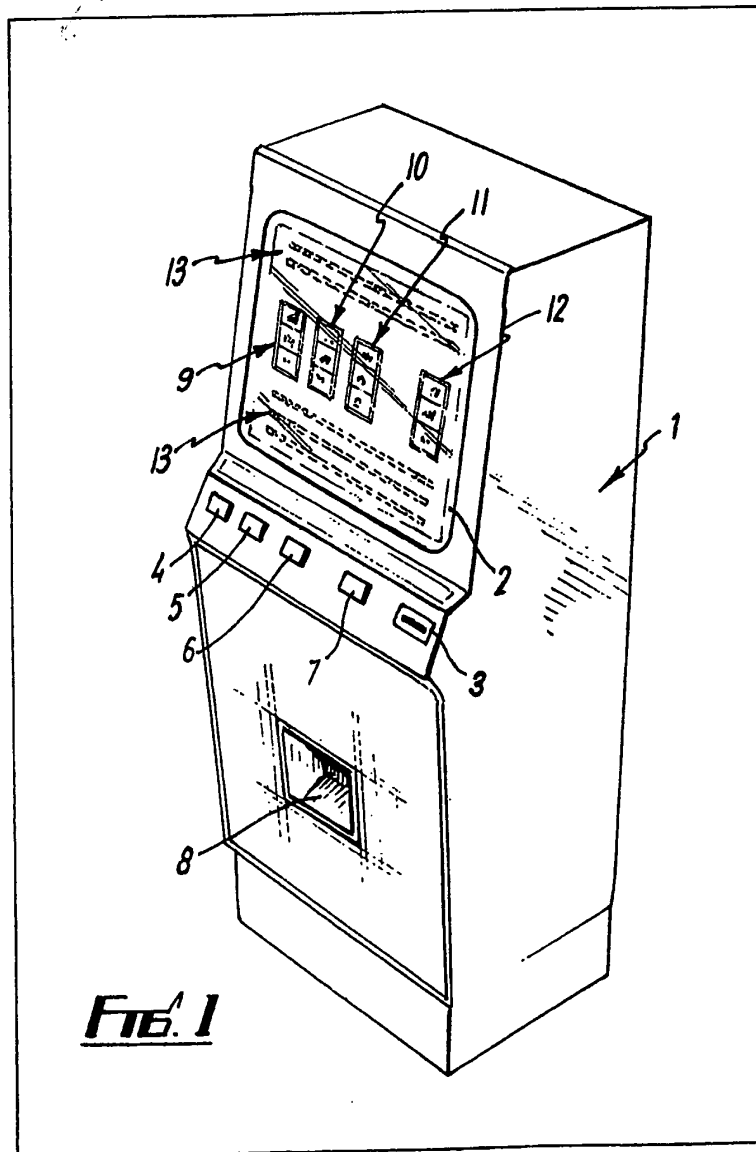
(54) Entertainment machines

(57) A coin-operated entertainment machine, particularly a fruit machine,

has a vdu screen on which symbols are displayed at a number of separate regions (9,10,11).

Player-operable control buttons (4,5,6) are provided for use in replacing the symbol at one region (9 to 11) with a symbol displayed elsewhere on the screen (region 12).

In a preferred embodiment the symbol to be replaced and the new symbol interchange positions in an operation involving simultaneous movement of the symbols across the screen.



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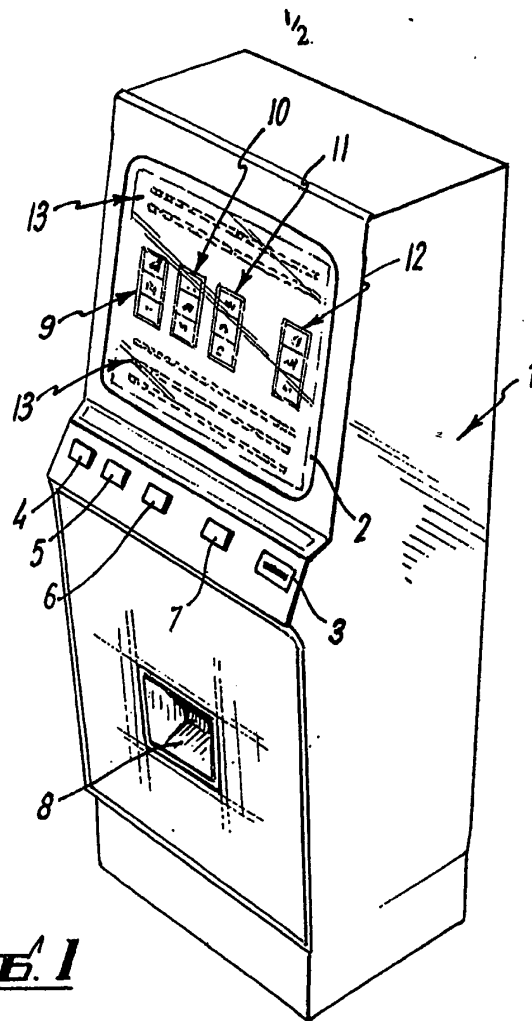


FIG. 1

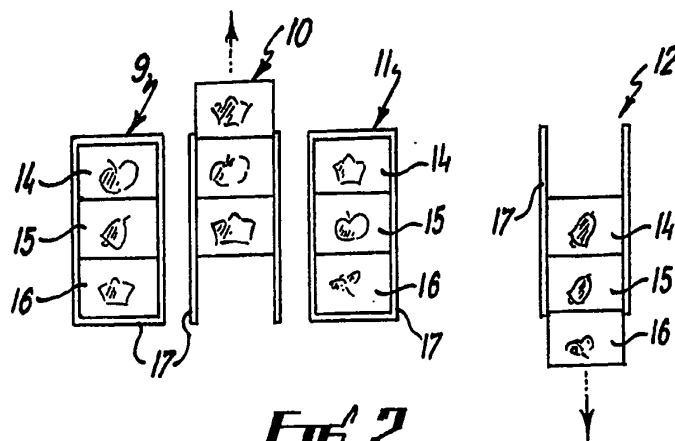
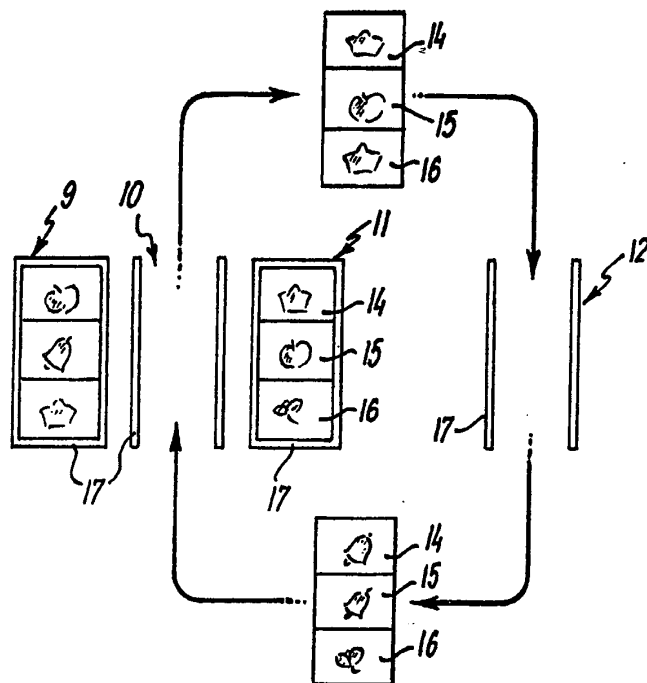


FIG. 2

$\frac{2}{2}$ **FIG. 3**

SPECIFICATION

Entertainment machines

5 This invention relates to a coin- or token- operated entertainment machine of the kind (hereinafter referred to as the kind described) having a plurality of display regions and which can be operated by a player to produce a display of one or more symbols at each of said regions with the aim of attaining a winning combination thereof.

With known entertainment machines of the kind described which are of the coin-operated fruit machine type the displayed symbols are selected at random and a win indication is produced in the event that the resulting combination thereof is of a predetermined winning nature. Rotatable reels having symbols marked around the peripheries thereof are commonly used to effect such random symbol selection although it is also known to use an electronic visual display unit (vdu) which is operable to produce a display simulating such reels. A vdu system of this kind is described in our published Patent No. 1,596,363.

25 With such coin-operated fruit machines it is known to provide player-operable controls such as "hold" and "nudge" buttons which can be used at the beginning or end of a game to influence or modify the selection of the displayed symbols thereby to improve the entertainment value of the machine.

30 An object of the present invention is to provide a further kind of control which can be used to improve the entertainment value of an entertainment machine of the kind described.

35 According to the invention therefore there is provided an entertainment machine of the kind described wherein the said display regions are defined by regions of a vdu screen characterised in that the machine has a control which is operable to effect replacement of at least one symbol displayed at at least one display region with a symbol displayed on said screen other than at said display region. Preferably, the control is a player-operable control although alternatively an automatic control may be used.

45 With this arrangement the entertainment value of the machine can be improved.

In a preferred embodiment the arrangement is such that operation of the said control effects disappearance of the first said symbol (or alternatively displacement thereof from its respective display region) and the second said symbol is arranged to move across the screen to take up the position previously occupied by the first said symbol. The first said symbol on replacement thereof may re-appear in or move across the screen to the position previously occupied by the second symbol. Movements of the first and second symbols may occur simultaneously.

60 There may be a plurality of symbols at each said display region in which case the said control may be operable to effect replacement of one or more such symbols with a corresponding number of symbols previously displayed elsewhere on the screen.

65 The arrangement may be such that a symbol or

symbols can be replaced at only one or alternatively at some or all of the display regions, and there may be a single said player-operable control or alternatively a plurality of controls, for example one for each display region. Where symbols can be replaced at a plurality of display regions the player may have the option to effect replacement at only one selected display region. Alternatively, the player may have the option to effect replacement at any or all of the said plurality of display regions.

70 Further, for the or each display region at which symbol replacement can be effected there may be only a single replacement symbol (or set of symbols) or alternatively there may be a plurality of symbols (or sets of symbols) from which one can be selected by the player for replacement purposes.

Said first symbol may be arranged to be replaced with said second symbol taken from one other said display region. Alternatively said first symbol may be arranged to be replaced with said second symbol taken from an auxiliary region not being one of said display regions.

The entertainment machine of the invention may be a coin-operated fruit machine as described above. In this case the said replacement symbol or symbols may be selected at random at an auxiliary display region or regions. The arrangement may be such that the said control or controls can be operated at the end of a game so that the player may have an opportunity of converting a losing combination into a winning combination or of converting a low value winning combination into a higher value winning combination. Alternatively and in the case where one or more "hold" buttons are provided to hold one or more displayed symbols at the start of a game, the arrangement may be such that the said control or controls can be operated at the start of the game before operation of an associated hold button or buttons thereby to improve the chance of obtaining a winning combination in the following game.

The invention will now be described further by way of example only and with reference to the accompanying drawings in which:-

Figure 1 is a diagrammatic perspective view of one form of machine according to the present invention; and

Figures 2 and 3 are diagrammatic representations of display regions of the machine at different stages during displacement thereof.

115 The machine is a coin-operated vdu fruit machine of the kind described in our published Patent No. 1,596,363 (and to which reference is made for a more detailed description thereof) and comprises a floor-standing box-structure housing 1 containing a colour video tube the front screen 2 of which is exposed through an opening in a front wall of the housing. A conventional coin mechanism has a slot 3 which is mounted at the front of the housing 1 as also are control switches 4,5,6,7 and a pay-out chute 8. Inside the housing there is an electronic control system which is connected to the coin mechanism to the control switches 4 to 7 to the video tube and to other mechanisms and devices such as indicator lamps, game counters, pay-out solenoids and the like.

130 In the manner described in published Patent

1,596,363 the video tube produces at four regions 9 to 12 displays simulating the peripheries of conventional fruit machine reels and at other regions 13 decorative and/or informative displays. Three of the regions 9 to 11 are equally spaced from each other and each provides a respective display of a vertical series of three fruit-containing areas 14,15,16 contained within a frame 17, the areas of all such regions 9 to 11 being respectively horizontally aligned with each other. The fourth region 12 is spaced more widely from the other regions 9 to 11 but produces a similar horizontally aligned display of three fruit-containing regions 14 to 16 within a frame 17.

15 In use, after actuation of the machine by insertion of one or more coins or tokens into the slot 3, and after operation of a start switch 7 by a player, the displays at the regions 9 to 12 change in a manner simulating the rotation of reels, such change terminating (after a different period of time for each region) with a fixed display of a series of three randomly selected fruit-containing areas 14 to 16 at each region 9 to 12. At the end of the game, if the horizontally aligned central areas 15 of the three regions 9 to 11 contain a combination of fruit which is of a predetermined winning nature, the player can obtain an appropriate award (which may be a direct pay-out of coins or tokens, an opportunity to have a further game or games, etc.).

30 On an occasional random basis, at the end of the game the player is provided with an opportunity to improve the combination on the winning line with the aim of converting a winning combination into a further winning combination having an award of greater value or of converting a lost game into a winning game. When such opportunity arises, which is signalled by a displayed notification on the screen 2 and/or by actuation of indicator lamps, the player can operate any one of three of the switches 4,5,6, which are positioned respectively directly beneath the three regions 9 to 11. On operation of one of these switches 4 to 6 the three fruit-containing areas 14 to 16 of the pertaining region start to move bodily upwardly as indicated in Figure 2 whilst at the same time the areas 14 to 16 of the fourth region 12 start to move bodily downwardly (the frames 17 opening to permit this). These displaced sets of areas 14 to 16 then interchange positions as shown in Figure 3 to give a new fruit combination on the winning line.

50 The three switches 4 to 6 beneath the regions 9 to 11 can also be used as conventional hold buttons i.e. for use at the start of a game (when such facility is made available to the player) to hold the displays against changing during the ensuing game.

55 With the arrangement described above considerable entertainment value can be derived from the opportunity afforded to the player to improve or modify the fruit combination obtained on the winning line.

60 It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only. Thus, for example, the interchange facility can be made available on a regular rather than a random basis and can be made available for

all regions as desired. Further, alternatively or additionally, the interchange facility may be made available at the start of a game in conjunction with the use of a hold facility. Still further, the symbol or set of symbols used for interchange purposes need not be provided by an auxiliary "reel" (i.e. display 12) but may comprise any other suitable form of fixed or changeable display. Moreover, it will be appreciated that it is also possible to interchange the displays 9 to 11 with each other directly or via the display region 12, if desired.

Still further, the adjustment circuit used to effect interchange of displayed symbols need not be arranged to be actuated solely by player-operable controls (i.e. the buttons 4 to 6) but alternatively or additionally may be arranged to be actuated automatically. For example, on a regular or random basis interchange of symbols from one or more of the main display regions (9,10,11) may be initiated at the start or end of a game, such interchange being of a random nature, or of a predetermined nature, or of a determined nature with the deliberate aim of achieving in so far as possible an improved combination (i.e. by converting a losing combination to a winning combination or by converting a winning combination into a higher value winning combination). In the last mentioned respect attention is directed to our co-pending Application of even date claiming priority from Application No. 8110547 and which discloses a machine which can be operated by a player at the start of a game, after actuation of a coin or token mechanism of the machine, to initiate performance of first machine operations represented by visual displays of a moving or changing nature at a plurality of display regions on the machine, such first operations terminating at random at the end of the game in a combination of fixed visual displays at such regions, and which is arranged to perform further operations resulting in a win indication in the event that said combination of fixed displays at the end of the game is of a predetermined nature, and said machine having a control device which is operable to provide a control facility to cause a fixed display at at least one said display region to change to a different fixed display as selected automatically by the machine with the aim of improving the combination of fixed displays at said display regions.

115 CLAIMS

1. A coin or token-operated entertainment machine having a plurality of display regions and which can be operated by a player to produce a display of one or more symbols at each of said regions with the aim of attaining a winning combination thereof, said display regions being defined by regions of a vdu screen, characterised in that the machine has a control which is operable to effect replacement of at least one symbol displayed at at least one display region with a symbol displayed on said screen other than at said display region.
2. A machine according to claim 1, wherein said control is a player-operable control.
3. A machine according to claim 1 or 2, wherein

said second symbol is arranged to move across the vdu screen into the said display region to take up the position previously occupied by the first said symbol.

5 4. A machine according to any one of claims 1 to 3, wherein the first said symbol is arranged to move across the vdu screen out of the said display region to vacate the position thereof to be taken up by the second symbol.

10 5. A machine according to claim 4, when dependent on claim 3, wherein the movements across the screen of the first and second symbols are arranged to take place simultaneously.

6. A machine according to any one of claims 1 to 15 5, wherein said first and second symbols are arranged to interchange positions thereof.

7. A machine according to any one of claims 1 to 6 wherein said first symbol is arranged to be replaced with said second symbol taken from one 20 other said display region.

8. A machine according to any one of claims 1 to 7, wherein said first symbol is arranged to be replaced with said second symbol taken from an auxiliary region not being one of said display 25 regions.

9. A machine according to any one of claims 1 to 8, wherein each said display region contains a plurality of symbols at different areas thereof and operation of said control is arranged to effect 30 replacement of all said symbols together from one said display region with a corresponding set of symbols displayed elsewhere on said screen.

10. A machine according to any one of claims 1 to 9, which is a fruit machine and wherein said 35 symbols are selected at random at said display regions.

11. A machine according to claim 10 wherein displays simulating the rotation of reels are produced at said display regions.

40 12. A machine according to claim 11, when dependent on claim 7, wherein a display simulating the rotation of a reel is also produced at said auxiliary region.

13. A coin-operated entertainment machine substantially as hereinbefore described with reference 45 to and as illustrated in the accompanying drawings.

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